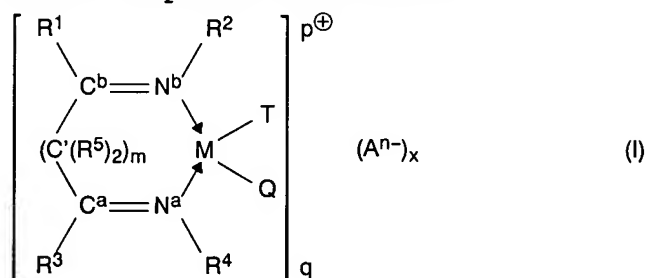


# APPENDIX III:

## THE LISTING OF CLAIMS (version with markings):

1. (canceled)
2. (canceled)
3. (canceled)
4. (canceled)
5. (canceled)
6. (canceled)
7. (canceled)
8. (canceled)
9. (canceled)
10. (canceled)
11. (new) A transition metal compound of formula

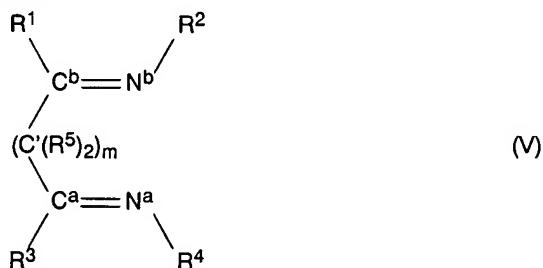


wherein:

- $\text{R}^1$ ,  $\text{R}^3$  are hydrogen,  $\text{C}_1$ - $\text{C}_{20}$ -alkyl,  $\text{C}_3$ - $\text{C}_{10}$ -cycloalkyl,  $\text{C}_6$ - $\text{C}_{16}$ -aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and from 6 to 16 carbon atoms in the aryl part,  $\text{Si}(\text{R}^6)_3$ ,  $\text{N}(\text{R}^6)(\text{R}^7)$ ,  $\text{OR}^6$ ,  $\text{SR}^6$ , or  $\text{R}^1$  and  $\text{R}^3$  together with  $\text{C}^a$ ,  $\text{C}^b$  and, if present,  $\text{C}'$  form a five-, six- or seven-membered aliphatic or aromatic, substituted or unsubstituted carbocyclic or heterocyclic ring,
- $\text{R}^2$ ,  $\text{R}^4$  are  $\text{C}_4$ - $\text{C}_{16}$ -heteroaryl or  $\text{C}_6$ - $\text{C}_{16}$ -aryl bearing  $\text{C}_4$ - $\text{C}_{16}$ -heteroaryl or  $\text{C}_6$ - $\text{C}_{16}$ -aryl substituents in the two vicinal positions relative to the linkage point to  $\text{N}^a$  or  $\text{N}^b$ ,
- $\text{R}^5$  is hydrogen,  $\text{C}_1$ - $\text{C}_{10}$ -alkyl,  $\text{C}_6$ - $\text{C}_{16}$ -aryl or alkylaryl having from 1 to 10 carbon atoms in the alkyl part and from 6 to 16 carbon atoms in the aryl part,

- R<sup>6</sup>, R<sup>7</sup> are C<sub>1</sub>-C<sub>10</sub>-alkyl, C<sub>6</sub>-C<sub>16</sub>-aryl or alkylaryl having from 1 to 10 carbon atoms in the alkyl part and from 6 to 16 carbon atoms in the aryl part,
- m is 0 or 1,
- M is a metal of group VIIIB of the Periodic Table of the Elements,
- T, Q are uncharged or monoanionic monodentate ligands or T and Q together form a diketoenolate unit or a C<sub>2</sub>- or C<sub>3</sub>-alkylene unit having a methyl ketone end group or a linear C<sub>1</sub>-C<sub>4</sub>-alkylester or nitrile end group,
- A is a noncoordinating or weakly coordinating anion,
- x, p are 0, 1, 2 or 3 and
- q, n are 1, 2 or 3.
12. (new) The transition metal compound of claim 11, wherein R<sup>2</sup> and R<sup>4</sup> are, independently of one another,  
2,6-diphenylphenyl, 2,6-di(4'-methylphenyl)phenyl, 2,6-di(4'-t-butylphenyl)phenyl, 2,6-di(4'-methoxyphenyl)phenyl, 2,6-bis(3',5'-dimethylphenyl)phenyl, 2,6-bis(2',4',6'-trimethylphenyl)phenyl, 2,5-diphenylpyrrolidyl, 2,5-di(4'-methylphenyl)pyrrolidyl, 2,5-di(4'-t-butylphenyl)pyrrolidyl, 2,5-di(4'-methoxyphenyl)pyrrolidyl, 2,5-bis(3',5'-dimethylphenyl)pyrrolidyl, 2,5-bis(2',4',6'-trimethylphenyl)pyrrolidyl, 2,5-diphenylpyrrolide, 2,5-di(4'-methylphenyl)pyrrolide, 2,5-di(4'-t-butylphenyl)pyrrolide, 2,5-di(4'-methoxyphenyl)pyrrolide, 2,5-bis(3',5'-dimethylphenyl)pyrrolide or 2,5-bis(2',4',6'-trimethylphenyl)pyrrolide.
13. (new) The transition metal compound of claim 11, wherein R<sup>2</sup> and R<sup>4</sup> are 2,6-di(4'-methoxyphenyl)phenyl or 2,5-di(4'-methoxyphenyl)pyrrolidyl.
14. (new) The transition metal compound of claim 11, wherein M is palladium or nickel.
15. (new) The transition metal compound of claim 11, wherein T is halide or methyl and Q is halide.
16. (new) The transition metal compound of claim 11, wherein R<sup>2</sup> and R<sup>4</sup> are both 2,6-diphenylphenyl and m is 0.
17. (new) The transition metal compound of claim 16, wherein R<sup>1</sup> and R<sup>3</sup> are hydrogen or methyl.

18. (new) The transition metal compound of claim 11, wherein  $R^2$  and  $R^4$  are both [2,6-bis(4-t-butylphenyl)phenyl] and  $m$  is 0.
19. (new) The transition metal compound of claim 18, wherein  $R^1$  and  $R^3$  are hydrogen or methyl.
20. (new) The transition metal compound of claim 11, wherein  $M$  is Ni.
21. (new) The transition metal compound of claim 20, wherein  $T$  and  $Q$  are chloride, bromide or iodide anions.
22. (new) A compound of the formula



wherein:

- $R^1$ ,  $R^3$  are hydrogen,  $C_1$ - $C_{20}$ -alkyl,  $C_3$ - $C_{10}$ -cycloalkyl,  $C_6$ - $C_{16}$ -aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and from 6 to 16 carbon atoms in the aryl part,  $Si(R^6)_3$ ,  $N(R^6)(R^7)$ ,  $OR^6$ ,  $SR^6$ , or  $R^1$  and  $R^3$  together with  $C^a$ ,  $C^b$  and, if present,  $C'$  form a five-, six- or seven-membered aliphatic or aromatic, substituted or unsubstituted carbocyclic or heterocyclic ring,
- $R^2$ ,  $R^4$  are  $C_4$ - $C_{16}$ -heteroaryl or  $C_6$ - $C_{16}$ -aryl bearing  $C_4$ - $C_{16}$ -heteroaryl or  $C_6$ - $C_{16}$ -aryl substituents in the two vicinal positions relative to the linkage point to  $N^a$  or  $N^b$ ,
- $R^5$  is hydrogen,  $C_1$ - $C_{10}$ -alkyl,  $C_6$ - $C_{16}$ -aryl or alkylaryl having from 1 to 10 carbon atoms in the alkyl part and from 6 to 16 carbon atoms in the aryl part,
- $R^6$ ,  $R^7$  are  $C_1$ - $C_{10}$ -alkyl,  $C_6$ - $C_{16}$ -aryl or alkylaryl having from 1 to 10 carbon atoms in the alkyl part and from 6 to 16 carbon atoms in the aryl part; and
- $m$  is 0 or 1.
- $M$  is a metal of group VIIIB of the Periodic Table of the Elements,
- $T$ ,  $Q$  are uncharged or monoanionic monodentate ligands or  $T$  and  $Q$  together form a diketoenolate unit or a  $C_2$ - or  $C_3$ -alkylene

unit having a methyl ketone end group or a linear C<sub>1</sub>-C<sub>4</sub>-alkylester or nitrile end group,

A is a noncoordinating or weakly coordinating anion,

x, p are 0, 1, 2 or 3 and

q, n are 1, 2 or 3.

23. (new) The compound of claim 22, wherein R<sup>2</sup> and R<sup>4</sup> are, independently of one another,

2,6-diphenyl-, 2,6-di(4'-methylphenyl)-, 2,6-di(4'-t-butylphenyl)-, 2,6-di(4'-methoxyphenyl)-, 2,6-bis-(3',5'-dimethylphenyl)- or 2,6-bis(2',4',6'-trimethylphenyl)phenyl,

2,5-diphenyl-, 2,5-di(4'-methylphenyl)-, 2,5-di(4'-t-butylphenyl)-, 2,5-di(4'-methoxyphenyl)-, 2,5-bis-(3',5'-dimethylphenyl)- or 2,5-bis(2',4',6'-trimethylphenyl)pyrrolidyl, or

2,5-diphenyl-, 2,5-di(4'-methylphenyl)-, 2,5-di(4'-t-butylphenyl)-, 2,5-di(4'-methoxyphenyl)-, 2,5-bis(3',5'-dimethylphenyl)- or 2,5-bis(2',4',6'-trimethylphenyl)pyrrolide.

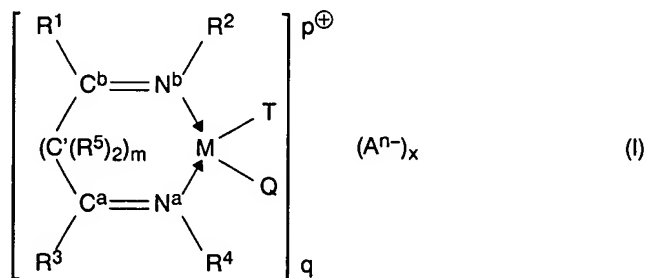
24. (new) The compound of claim 22, wherein R<sup>2</sup> and R<sup>4</sup> are both 2,6-di-phenylphenyl and m is 0.

25. (new) The transition metal compound of claim 24, wherein R<sup>1</sup> and R<sup>3</sup> are hydrogen or methyl.

26. (new) The transition metal compound of claim 22, wherein R<sup>2</sup> and R<sup>4</sup> are both [2,6-bis(4-t-butylphenyl)phenyl] and m is 0.

27. (new) The transition metal compound of claim 26, wherein R<sup>1</sup> and R<sup>3</sup> are hydrogen or methyl.

28. (new) A process for the polymerization of olefins which comprises contacting one or more polymerizable olefins with a compound of formula



and optionally one or more cocatalysts, and

- R<sup>1</sup>, R<sup>3</sup> are hydrogen, C<sub>1</sub>-C<sub>20</sub>-alkyl, C<sub>3</sub>-C<sub>10</sub>-cycloalkyl, C<sub>6</sub>-C<sub>16</sub>-aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and from 6 to 16 carbon atoms in the aryl part, Si(R<sup>6</sup>)<sub>3</sub>, N(R<sup>6</sup>)(R<sup>7</sup>), OR<sup>6</sup>, SR<sup>6</sup>, or R<sup>1</sup> and R<sup>3</sup> together with C<sup>a</sup>, C<sup>b</sup> and, if present, C' form a five-, six- or seven-membered aliphatic or aromatic, substituted or unsubstituted carbocyclic or heterocyclic ring,
- R<sup>2</sup>, R<sup>4</sup> are C<sub>4</sub>-C<sub>16</sub>-heteroaryl or C<sub>6</sub>-C<sub>16</sub>-aryl bearing C<sub>4</sub>-C<sub>16</sub>-heteroaryl or C<sub>6</sub>-C<sub>16</sub>-aryl substituents in the two vicinal positions relative to the linkage point to N<sup>a</sup> or N<sup>b</sup>,
- R<sup>5</sup> is hydrogen, C<sub>1</sub>-C<sub>10</sub>-alkyl, C<sub>6</sub>-C<sub>16</sub>-aryl or alkylaryl having from 1 to 10 carbon atoms in the alkyl part and from 6 to 16 carbon atoms in the aryl part,
- R<sup>6</sup>, R<sup>7</sup> are C<sub>1</sub>-C<sub>10</sub>-alkyl, C<sub>6</sub>-C<sub>16</sub>-aryl or alkylaryl having from 1 to 10 carbon atoms in the alkyl part and from 6 to 16 carbon atoms in the aryl part,
- m is 0 or 1,
- M is a metal of group VIII B of the Periodic Table of the Elements,
- T, Q are uncharged or monoanionic monodentate ligands or T and Q together form a diketoenolate unit or a C<sub>2</sub>- or C<sub>3</sub>-alkylene unit having a methyl ketone end group or a linear C<sub>1</sub>-C<sub>4</sub>-alkylester or nitrile end group,
- A is a noncoordinating or weakly coordinating anion,
- x, p are 0, 1, 2 or 3 and
- q, n are 1, 2 or 3.
29. (new) The process of claim 28 which is carried out in the presence of hydrogen.
30. (new) The process of claim 28 which is carried out at a temperature of -40°C to 160°C.
31. (new) The process of claim 30 which is carried out in the presence of hydrogen.
32. (new) The process of claim 28 which is conducted in the presence of one or more cocatalysts.
33. (new) The process of claim 32, wherein the cocatalyst is an aluminum alkyl, a haloaluminum alkyl, or an alumoxane.

34. (new) The process of claim 33, wherein the alumoxane is methyl alumoxane.
35. (new) The process of claim 28, wherein  $R^2$  and  $R^4$  are, independently of one another,  
2,6-diphenyl-, 2,6-di(4'-methylphenyl)-, 2,6-di(4'-t-butylphenyl)-, 2,6-di(4'-methoxyphenyl)-, 2,6-bis-(3',5'-dimethylphenyl)- or 2,6-bis(2',4',6'-trimethylphenyl)phenyl,  
2,5-diphenyl-, 2,5-di(4'-methylphenyl)-, 2,5-di(4'-t-butylphenyl)-, 2,5-di(4'-methoxyphenyl)-, 2,5-bis-(3',5'-dimethylphenyl)- or 2,5-bis(2',4',6'-trimethylphenyl)pyrrolidyl, or  
2,5-diphenyl-, 2,5-di(4'-methylphenyl)-, 2,5-di(4'-t-butylphenyl)-, 2,5-di(4'-methoxyphenyl)-, 2,5-bis(3',5'-dimethylphenyl)- or 2,5-bis(2',4',6'-trimethylphenyl)pyrrolide.
36. (new) The process of claim 28, wherein  $R^2$  and  $R^4$  are both 2,6-diphenylphenyl and m is 0.
37. (new) The process of claim 36, wherein  $R^1$  and  $R^3$  are hydrogen or methyl.
38. (new) The process of claim 28, wherein  $R^2$  and  $R^4$  are both [2,6-bis(4-t-butylphenyl)phenyl] and m is 0.
39. (new) The process of claim 38, wherein  $R^1$  and  $R^3$  are hydrogen or methyl.
40. (new) The process of claim 28, wherein M is Pd or Ni.
41. (new) The process of claim 40, wherein Q and T are chloride, bromide or iodide.
42. (new) The process of claim 28, wherein M is Ni.
43. (new) The process of claim 28, wherein one of the one or more polymerizable olefins is ethylene.
44. (new) The process of claim 43, wherein ethylene is the only polymerizable olefin.
45. (new) The process of claim 28, wherein a polymerizable olefin comprising a functional group is present.
46. (new) The process of claim 28, which is carried out in a liquid phase.

47. (new) The process of claim 28, which is carried out in a gas phase.
48. (new) The process of claim 47, wherein the compound and optionally one or more of the cocatalysts are supported on a carrier.
49. (new) The process of claim 28, wherein the compound and optionally one or more of the cocatalysts are supported on a carrier.

APPENDIX IV:

CROSS-REFERENCE CLAIM / DISCLOSURE:

New Claim No.	Supporting Disclosure*
11	Claim 1, page 31, indicated line 4, to page 32, indicated line 8
12	Claim 2, page 32, indicated lines 10 to 26
13	Claim 3, page 32, indicated lines 28 to 30
14	Claim 4, page 32, indicated lines 32 and 33
15	Claim 5, page 32, indicated lines 35 and 36
16	page 5, indicated lines 32 to 36; page 24, indicated lines 25 to 36
17	page 6, indicated lines 24 and 25
18	page 5, indicated lines 32 to 36; page 24, indicated lines 25 to 36
19	page 6, indicated lines 24 and 25
20	page 4, indicated line 22; page 6, indicated lines 45 and 46
21	page 7, indicated lines 16, 17 and 35 to 39
22	Claim 1, page 10, indicated lines 1 to 8
23	Claim 2, page 10, indicated lines 1 to 8
24	new Claim 16 in conjunction with page 10, indicated lines 1 to 8
25	new Claim 17 in conjunction with page 10, indicated lines 1 to 8
26	new Claim 18 in conjunction with page 10, indicated lines 1 to 8
27	new Claim 19 in conjunction with page 10, indicated lines 1 to 8
28	Claim 8, page 33, indicated lines 6 to 9
29	page 21, indicated lines 24 to 29
30	page 21, indicated lines 16 to 19
31	page 21, indicated lines 24 to 29
32	page 11, indicated line 32 et seq.
33	page 12, indicated line 27, 34 and 35
34	page 12, indicated line 31 et seq.
35	Claim 2 in conjunction with new Claim 28
36	new Claim 16 in conjunction with new Claim 28
37	new Claim 17 in conjunction with new Claim 28
38	new Claim 18 in conjunction with new Claim 28
39	new Claim 19 in conjunction with new Claim 28
40	new Claim 14 in conjunction with new Claim 28
41	new Claim 15 in conjunction with new Claim 28
42	new Claim 20 in conjunction with new Claim 28
43	Claim 9, page 33, indicated lines 11 and 12
* application text which is the English language translation of the International application	



New Claim No.	Supporting Disclosure*
44	page 16, indicated lines 17 and 18
45	page 16, indicated line 36 et seq.
46	page 20, indicated lines 21 to 37
47	page 20, indicated line 39 et seq.
48	page 20, indicated line 39 et seq.
49	page 20, indicated line 39 et seq.
* application text which is the English language translation of the International application	